USSR

STEPANYAN, YE. P., et al., Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 1, 1970, pp 40-44

dilution in the myocardial tissues, suggests that large amounts of rheoglucine impair physiological homeostasis. Despite these disturbances, no functional or morphological complications in animal organs were observed in any of the experiments.

USSR

UDC: 621.391.244

POSTNIKOV, L. V. and MEL'NIKOVA, V. A.

"Amplification on the Three-Frequency Interaction Principle"

Gor'kiy, Izvestiya VUZ-Radiofizika, No 10, 1972, pp 1517-1526

Abstract: A weakly linear system with three degrees of freedom, excited at one of its characteristic frequencies, is considered in this paper. With an outside oscillation, at a harmonic of a frequency close to that characteristic frequency applied with sufficiently low amplitude, it is shown that an amplification effect with frequency conversion can be obtained in such a system. The behavior of the amplitude-frequency characteristics and the stability of the system are investigated as functions of its parameters. It is noted that this effect may be used as the basis for a compact parametric amplifier in which a self-oscillating system excited by the negative resistance of a tunnel diode, for example, is used for pumping. The authors express their gratitude to M. I. Rabinovich for posing the problem and for participating in the discussion of the results.

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1/2 048 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EXPERIENCE IN AERIAL INVESTIGATION OF VOLCANIC SURFACES ON KAMCHATKA -U-

AUTHOR-(04)-LIPSKIY, YU.N., SHTEYNBERG, G.S., POSPERGELIS, M.M., NOVIKOV, V.V.

COUNTRY OF INFO--USSR

SOURCE--STATE ASTRONOMICAL INSTITUTE; MOSCOW, ASTRONOMICHESKIY ZHURNAL, VOL 47, NO 2, 1970, PP 411-419

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--VOLCANO, SPECTROGRAPH, LIGHT POLARIZATION, IR SPECTROMETER, LIGHT REFLECTION, AERIAL RECONNAISSANCE/(U)ASP 15 SPECTROGRAPH, (U)AN2 AIRCRAFT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0960 STEP NO--UR/0033/70/047/002/0411/0419

CIRC ACCESSION NO--AP0126608

UNCLASSIFIED

2/2 048 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0126608

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES THE RESULTS OF AN AERIAL INVESTIGATION OF VOLCANIC SURFACES ON KAMCHATKA BY POLARIZATION AND SPECTRAL METHODS. THE SURVEY WAS MADE AT ALTITUDES UP TO 1 KM WITH STANDARD SOLAR ILLUMINATION ABOARD AN AN-2 AIRCRAFT. AN ASP-15 SPECTROGRAPH WAS USED IN OBTAINING THREE SPECTRAL CHARACTERISTICS: TOTAL RADIATION INTENSITY, DEGREE OF POLARIZATION AND ORIENTATION OF THE POLARIZATION PLANE: THE SPECTRAL RANGE 410-67M MU WAS COVERED. THE USE OF AN INFRARED SPECTROMETER ASSEMBLED ON THE BASIS OF A ZMR-2 INSTRUMENT MADE IT POSSIBLE TO STUDY THE BRIGHTNESS DISTRIBUTION OF SOLAR LIGHT IN THE SPECTRUM WHICH WAS REFLECTED FROM VOLCANIC SURFACES IN THE SPECTRAL RANGE FROM 0.3 TO 2.5 MU. A CLOSE SIMILARITY WAS FOUND BY A COMPARISON OF THE POLARIZATION AND SPECTRAL CHARACTERISTICS OF THE STUDIED SURFACES AND LUNAR SURFACES (FOR THE SEAS) IN THE CASE OF A SLAG FIELD. FRESH BASALTIC LAVA FLOWS CAN BE ANALOGUES OF THE SURFACE COVER OF THE BOTTOM OF TYCHO CRATER. IT WAS NOTED THAT THE PRESENCE OF LARGE ROCK FRAGMENTS ON THE INVESTIGATED SURFACE LEADS TO A NEUTRAL DEPENDENCE OF THE DEGREE OF POLARIZATION ON WAVELENGTH. THE POLARIZATION AND SPECTRAL CHARACTERISTICS OBTAINED FOR WATER, HARDWOOD AND SOFTWOOD FORESTS ARE COMPARED.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--MAGNETOTELLURIC SOUNDINGS IN THE SOUTH OF THE SIBERIAN PLATFORM AND BAIKAL RIFT ZONE -U-
AUTHOR-(03)-GURNOSTAYEV, V.P., MIKHALEVSKIY, V.I., POSPEYEV, V.I.

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 4, PP 111-118

DATE PUBLISHED--------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MAGNETOTELLURIC SOUNDING, GEOELECTRIC FIELD, EARTH CRUST, UPPER MANTLE, MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/0052 STEP NO--UR/0210/70/000/004/0111/0118

CIRC ACCESSION NO--AP0114448

UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0114448

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTS OF DEEP MAGNETOTELLURIC SOUNDINGS (MTS) HAVE BEEN MADE DURING 1961-1968 YEARS IN PRIBAIKALIA ARE CONSIDERED IN THE PAPER. THREE AREAS (BLOCKS) ARE SUPPOSED IN THE TERRITORY OF PRIBAIKALIA, BASED UPON REPRESENTATIVE DATA: PLATFORM ONE, RIFT AND TRANSITIONAL WITH DIFFERENT GEOELECTRIC MODEL OF THE EARTH'S CRUST SECTION AND UPPER MANTLE. THE CONVENTIONAL BOUNDARIES OF THESE AREAS ARE ORIENTED IN PARALLEL TO BAIKALIAN RIFT ZONE. DIFFERENT THERMAL REGIME IN LISTED AREAS IS SUGGESTED AS A MAIN REASON OF CRUSTAL AND MANTLE GEOELECTRIC MODEL CHANGE FROM PLATFORM BLOCK TO RIFT ONE. FACILITY: VOSTOCHNYY GEOFIZICHESKIY TREST VOSTSIBNIIGGIMS, IRKUTSK.

UNCLASSIFIED

USSR

UDC 519.21

POSPEYEV, V. Ye.

"One Method of Solution of Certain Linear Probability Equations with Three Independent Variables"

Krayev. Zadachi Dlya Differents. Uravneniy s Chastnymi Proizvodnymi [Boundary Problems for Differential Equations with Partial Derivatives -- Collection of Works], Tashkent, Fan Press, 1970, pp 119-125, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V4 by V. Chistyakov).

Translation: The method of V. I. Romanovskiy (Mat. sb., No 1, 1945, pp 143-165) for solution of linear difference equations with two variables is extended to linear equations with three variables. As an illustration, the difference equation for the probability $P_{nm_1m_2}$ that E_1 appears m_1 times in n independent tests, while E_2 appears m_2 times and E_3 appears $n - m_1 - m_2$ times is solved. The probabilities of appearance of E_1, E_2 and E_3 in an individual test are α, β, $\gamma(\alpha + \beta + \gamma = 1)$. It is noted that the method can also be used with a larger number of variables, but this causes further complication of the structure of the matrix used in solution.

USSR UDC 541.138

MUCHNIK, G. F., RUBASHOV, I. B., VLASOV, V. M., GANIN, YE. A., KARICHEV, Z. R., and POSTANOGOV, V. P., Moscow

"Study of the Leakage of Fuel Gases Into Electrolyte Chambers of Fuel Cells"

Moscow, Elektrokhimiya, Vol 8, No 5, May 72, pp 690-694

Abstract: It was shown that the average rate of leakage of a gas into an electrolyte is affected to a great degree by such factors as current charge, temperature of the elements, battery, pressure drop between the gasseous and electrolytic sides of the electrolytes, and the concentration of the electrolyte. The type of the functional curves obtained experimentally agree sufficiently well with those obtained from theoretical calculations of diffusion leakage, however, under experimental conditions this effect is much stronger, especially in case of temperature. The leaking gas consists almost exclusively of hydrogen. It was shown that gas mobility does not affect the rate of leakage if water vapor tension is kept constant. An increased rate of the leakage observed with a higher rate of moisture removal from the surface of the electrolyte is evidently due to a shift in the equilibrium in the pores in presence of secondary meniscuses.

1/1

USSR

UDC 621. 314.61

PATSKEVICH, I.R., MARISHKIN, A.V., POSTNIKOV, V.F., RYKOV, O.A.

"Thyristor Converter For Investigation By The Method Of Pulse Fusion Of Melting And Evaporation Of Electrode Material"

Sb. nauchn. tr. Perm. politekhn. in-ta (Collection Of Scientific Works Of The Permskiy Polytechnical Institute), 1970, No 76, pp 75-79 (From RZh--Elektronika i yeye primeneniye, No 6, June, 1970, Abstract No 65555)

Translation: A unit is proposed for investigation of the instantaneous melting rate and for determination of the coefficients of melting and evaporation of electrode material during arc welding. The unit consists of a controlled rectifier, a control system, an electronic timing relay, and a device for immobilization of the specimens and for striking of the arc. The rectifier is built up of a 3-phase bridge circuit based on VKDU-2-150 thyristors. The control system consists of an electron switch based on a transistor and a 3-phase rectifier with six peak transformers. 3 ill. 2 ref. A.T.

1/1

UDC 621.396.946

USSR

POSTAVNOY, V.I.

"On The Ambiguity Function Of Multiphase Signals (Short Report)"

Elektrosvyaz', No 9, Sept 1972, pp 63-65

Abstract: The paper is concerned with a study of the ambiguity functions of multiphase signals and an analysis of the possibility of using such signals for construction of a radio engineering system insensitive within wide limits to a change of the carrier frequency. 4 fig. 2 tab. 4 ref. Received by editors, 19 March 1971.

1/1

POSTNICHENKO, E.V.

Rigid Active capsules for Safety Explosives

TECHNICAL TRANSLATION

FSTC-HT-23-321-72

ENGLISH TITLE: Rigid Active Capsules for Safety Explosives

FOREIGN TITLE: Zhestkiye Aktivnyye Obolochki Dlya Predokhranitel'nykh VV

AUTHOR: K. S. Ushkarovich, E. V. Postnichenko, T. M. Panova

SOURCE: Vzryvnoye Delo 1970, No. 68/25, p 284-288

Translated for FSTC by Albert L. Peabody
LEO KANNER ASSOCIATES, INC.

NOTICE

USSR UDC 511

POSTNIKOV A. G.

"Introduction to Analytic Number Theory"

Vvedeniye v analiticheskuyu teoriyu chisel (cf. English above), Moscow, "Nauka," 1971, 416 pp, ill., 1 r. 60 k. (from RZh-Matematika, No 2, Feb 72, Abstract No 2A151K)

Translation: Chapter I. Some Information from Analysis. Chapter II. Additive Problems with a Growing and Infinite Number of Addends. Chapter III. Theory of Functions of a Natural Argument. Chapter IV. Theory of Multiplicative Functions.

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USSR UDC 599.32+595.775:591.5+591.9

ROTSHIL'D, Ye. V., KONDRASHEV, V. E., TAKUNINA, T. I., and POSTNIKOV, G. B., All-Union Scientific Research Antiplague Institute "Mikrob", Saratov and Gur'yevskaya Antiplague Station

"Rodents and Fleas in the Enzootic Plague Region Between the Ural and Emba Rivers"

Moscow, Zoologicheskiy Zhurnal, Vol 49, No 10, Oct 70, pp 1548-1562

Abstract: The desert located north of the Caspian Sea between the Ural and Emba rivers is an area of enzootic plague. The numerous specimens of fauna caught by the Gur'yevskaya Antiplague Station for bacteriological investigations, together with data available in the literature from 1875 to 1969 were used to systematize the available information and to shed light on the problem. The whole region was divided into small areas and still smaller landscapes according to such ecological factors as geology, surface relief, and type of soil. Data were compiled on the distribution of various rodents and the average number of epizoic fleas living on each type of animal. It was found that high soil salinity and moisture were unfavorable for Citellus pygmaeus, Citellus fulvus, and Meriones tamariscinus, but did not affect the distribution of Rhombomys

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USSR

ROTSHIL'D, Ye. V., et al., Zoologicheskiy Zhurnal, Vol 49, No 10, Oct 70, pp 1548-1562

opimus. The number of fleas living on Rhombomys opimus and Citellus pygmaeus was especially high in landscapes of recently dried up deltas which have moderate soil salinity and moisture. These factors promote the proliferation of plague-spreading epizoons among rodents.

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POSTNIKOV, I. M.

JPRS 60634
27 November 1973

LAMINAR-FLOW LIQUID-METAL MAGNETOHYDRODYNAMIC SYSTEMS AND SYNCHRONOUS GENERATION OF ELECTRIC POWER

[Article by Ye. T. Baseyev, V. Ye. Pavlenko, G. M. Shcherelov, Institute of Technical Thermophysics of the Ukrainian SSR Academy of Sciences, K. C. Bezusyy, K. I. Kim, I. M. Postnikov, Electrodynamics Institute of the Ukrainian SSR Academy of Sciences, Kiev, USSR; Warsaw, IAEA Symposium on Electricity from Magnetohydrodynamics, 1968, pp 1635-1646]

The primary difficulties when implementing liquid-metal magnetohydrodynamic generators by the known designs consist in acceleration the liquid-metal to high velocities before the channel, which is connected with high losses to friction in the two-phase nozzle and channel. If the expansion of the vapor (gas) is transferred to the channel, then the electrical conductivity of the flow (the vapor-liquid mixture) is significantly reduced. The magnetohydrodynamic generator in which the liquid-metal flow is separated into segments (liquid pistons) moving as a result of expansion of the medium (vapor or gas) between them appears to be much more prospective. Our preliminary experiments have demonstrated the possibility of obtaining a piston-like (laminar) flow. The utilization of this principle permits: 1) organization of the acceleration process without shocks and mutual slipping of the phases; 2) maximum reduction of the thermal contact surface between the phases and an increase in the thermodynamic efficiency of the cycle, realizing it in a broader temperature range; 3) realization of a constant flow velocity in the channel; 4) the production of electric power by a synchronous magnetohydrodynamic generator. The application of the synchronous principle combined with the described method of accelerating the liquid-metal permits the consideration that high-power generators can be built. The thermodynamic cycles of liquid-metal magnetohydrodynamic generators can be divided into two groups with respect to condensation temperature; high-temperature generators designed for use

USSR UDC: 621.382.2

KOLOMEYTSEV, V. F., POSTNIKOV, I. V., MIL'MAN, S. I.

"A Gallium Arsenide Mixer Diode With Schottky Barrier"

Elektron. tekhnika. Nauch.-tekhn. sb. Poluprovodn. pribory (Electronic Technology. Scientific and Technical Collection. Semiconductor Devices), 1970, vyp. 5 (55), pp 3-11 (from RZh-Elektronika i yeye Primeneniye, No 6, Jun 71, Abstract No 6B217)

Translation: Design calculations and measurement results are given for a microwave mixer diode with Schottky barrier. The design of the semiconductor diode is based on an epitaxial planar structure with gold – gallium arsenide honeycomb contacts. The operations used include epitaxial growth, ion plasma application of a protective film, photolithography and electrochemical and vacuum deposition. The parameters of the resultant semiconductor diodes are also presented. Resumé.

1/1

USSR

POSTNIKOV, N. N., POSTNIKOVA, N. V.

"One Method of Eliminating Redundancy in Messages"

Nauch. Tr. Mosk. Tekhnol. In-t Legk. Prom-sti [Scientific Works of Moscow Technological Institute for Light Industry], 1972, No 38, pp 63-69 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V475, by E. Gabidulin).

Translation: A study is made of approximation of a function in a certain interval by a second power polynomial. The quantitative data on effectiveness of this method of elimination of redundancy are not presented.

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UDC 669.715

USSR

POSTNIKOV, N. S. and CHERKASOV, V. V.

"Progressive Methods of Smelting and Casting Aluminum Alloys"

Moscow, Progressivnyye Metody Plavki i Lit'ya Alyuminiyevykh Splavov, Izd-vo Metallurgiya, 1973, 224 pp

Translation of Introduction: The production of aluminum alloys and different finished products from them using the method of casting has been used for many decades. It would seem that this period would be sufficient for establishing fully determined methods of production; however even at the present time there is no unified opinion on many questions of the technology in this branch. This is due to the large number of factors which influence the quality of the casting, and the complexity of the phenomena which take place both during the smelting and during casting and crystallization. And only by careful systematization of the scientific and practical materials is it possible to present a clear picture of the processes and phenomena which exist in the metallurgy (smelting and casting) of aluminum alloys. In recent years a number of high-strength alloys have been developed (AL4M, VAL5, AL27, etcetera), as well as new

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POSTNIKOV, N. S., et al, Progressivnyye Metody Plavki i Lit'ya Alyuminiyevykh Splavov, Izd-vo Metallurgiya, 1973, 224 pp

methods of casting (casting under low pressure, casting by pressing, etcetera). All this has facilitated the expansion of the list of cast parts of the most important types. But along with this, all the possibilities of standard alloys and long-familiar casting methods are far from being used. Thanks to the modern idea of alloying, modification, heat treatment, as well as the improvement of known methods of casting, it is possible to have a complete realization of the properties of alloys all the way up to production of parts from them, the exploitation of which must ensure reliability of construction.

The advantages of casting parts prior to other methods of producing them involve not only less time consumption for the process, uniformity of structure, lack of anisotropy in the properties and increase in rigidity of the cast structures, but also the possibility of manufacturing parts which can never be produced by other methods.

The specifics of the cast production, especially at the current stage, when the question of replacement in a number of

USSR

POSTNIKOV, N. S., et al, Progressivnyye Metody Plavki i Lit'ya Alyuminiyevykh Splavov, Izd-vo Metallurgiya, 1973, 224 pp

cases of deformable semi-finished products by cast parts, require a tight, creative cooperation of constructers, technicians, and metal workers. Therefore it is necessary to acquaint the constructers with the properties of cast alloys, the metallurgical bases of their production, and the technical-economic advantages of cast parts, and to acquaint the metallurgists with the operating conditions and basic requirements imposed on the cast parts.

CONTENTS

USSR

POSTNIKOV, N. S., et al, Progressivnyye Metody Plavki i Lit'ya Alyuminiyevykh Splavov, Izd-vo Metallurgiya, 1973, 224 pp

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POSTNIKOV, N. S., et al, Progressivnyye Metody Plavki i Lit'ya Alyuminiyevykh Splavov, Izd-vo Metallurgiya, 1973, 224 pp

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UDC: 669.715

USSR
POSTNIKOV, N. S.

"Airtight Aluminum Alloys"

Vysokogermetichnyye Alyuminiyevyye Splavy [English version above], Moscow, Metallurgiya Press, 1972, 160 pp.

Translation of Foreword: The continuous technical progress in machine building and other branches of industry has required a significant increase in the production of nonferrous metal alloys and intheir quality. Aluminum and its alloys occupy a special position in the production of nonferrous metals. The low density of aluminum alloys, in combination with their high strength, as well as the almost unlimited raw-material resources available for the production of aluminum, have facilitated the broad utilization of aluminum alloys in many branches of the economy.

The broad utilization of aluminum and its alloys in the economy sets the task of creation of alloys satisfying the requirements of various branches of industry before metallurgists, metal scientists and foundrymen.

Aluminum alloys have been most broadly used in aviation engineering, where the quest for speed, altitude and flight duration makes the problem of structural weight reduction particularly significant.

Many parts of fuel equipment, control apparatus, air conditioning systemsand other equipment are made of cast aluminum alloys; parts of this type operate under internal gas or liquid pressure, their configuration is very complex, and

USSR

Postnikov, N. S., Vysokogermetichnyye Alyuminiyevyye Splavy, Moscow, Metallurgiya Press, 1972, 160 pp.

increases in the operating pressure of these parts allow the dimensions and weight to be reduced, while increasing power capacity and economy of products. Therefore, the quality of cast aluminum alloys used to manufacture bodies, pumps, injectors, etc. is evaluated on the basis of mechanical and technological properties, as well as density and airtightness. Airtightness is one of the specific properties of aluminum casting alloys and must be considered in the planning, production and quality control of cast parts for hydraulic and pneumatic systems.

The problem of airtightness of aluminum casting alloys is very pressing. At the present time, the scientists of many countries are studying the airtightness of aluminum casting alloys in order to increase the quality of castings used in pneumatic and hydraulic systems. This work consists in studying the physical essence of airtightness, development and improvement of experimental methods of its quantitative evaluation, establishment of the influence of various factors on airtightness and development of specific recommendations for planning and design of airtight parts.

This book presents studies performed by the author, plus summarization of results of the work of scientists and production workers performed in recent years.

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USSR

Postnikov, N. S., Vysokogermetichnyye Alyuminiyevyye Splavy, Moscow, Metallurgiya Press, 1972, 160 pp.

After analysis of all this work, the quantitative and qualitative dependence of airtightness of cast parts on chemical composition, structure, purity of aluminum alloys, quality of the casting mold and other technological factors is established, and highly airtight alloys and effective methods for production of airtight parts are developed.

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USSR

Postnikov, N. S., Vysokogermetichnyye Alyuminiyevyye Splavy, Moscow, Metallurgiya Press, 1972, 160 pp.

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USSR UDC 669.715'3'782'73'721'781.018.28:669.018.2(088.8)

STROGANOV, G. B., AL'TMAN, M. B., POSTNIKOV, N. S., KHOLODOV, Yu. I., OSIPOV, I. N., LOKTIONOVA, L. I., and CHERKASOV, V. V.

"High-Strength Aluminum-Base Casting Alloy"

USSR Authors' Certificate No 260893, Cl. 40 b, 21/02, (C22c), filed 10 Apr 68, published 12 May 70 (from RZh-Metallurgiya, No 12, Dec 70, Abstract No 12 1766 P)

Translation: The alloy contains (in %) Si 6-8, Cu 2.5-5.5, Cd 0.05-0.4, Mg 0.05-0.4, B 0.002-0.1, Zr 0.005-0.25, Ti 0.1-0.3, Fe $\leq$ 0.5. The addition of up to 0.5% Ni is recommended in order to raise heat resistance. In the heat-treated state under regime T5 the alloy at room temperature (loam casting) has a breaking point of 36-40 kg/mm^2, $\sigma_{0.2}$ 30-34 kg/mm^2, and σ 3-6% given σ_{100}^{300} = 5.5 kg/mm^2. The alloy possesses elevated fluidity and impermeability, is highly machinable, is weldable by argon arc welding, and contains no toxic elements. It is recommended for the manufacture of cast parts subject to great stresses.

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1/2 024 PROCESSING DATE--02OCT70

TITLE--HIGH STRENGTH ALUMINUM BASE CASTING ALLOY -U-

AUTHOR-(05)-STROGANOV, G.B., ALTMAN, M.B., POSTNIKOV, N.S., KHOLODOV, YU.I., OSIPOV, I.N.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 260,893

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--06JAN70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--ALUMINUM ALLOY, METAL CASTING, METALLURGIC PATENT, HIGH STRENGTH ALLOY, DIE CASTING, NICKEL CONTAINING ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1790 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0109751

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202520009-9"

2/2 024 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AA0109751

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO INCREASE THE PHYSICOMECH. PROPERTIES OF THE TITLE ALLOY DURING DIE CASTING, IT HAS THE FOLLOWING COMPN.: SI 6-8, CU 2.5-5.5, CD 0.05-0.4, MG 0.05-0.4, B 0.002-0.1, ZR 0.005-0.25, TI 0.1-0.3, FE SMALLER THAN OR EQUAL TO 0.5PERCENT, AND AL THE REMAINDER. TO INCREASE THE HIGH TEMP. STRENGTH OF THE ALLOY, IT ALSO CONTAINED SMALLER THAN 0.5PERCENT NI.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--DENSITY AND VISCOSITY OF SATURATED AQUEOUS SOLUTIONS OF SOME SUBSTANCES -U-

AUTHOR--POSTNIKOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 236-8

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--VISCOSITY, FLUID DENSITY, SULFATE, CHLORIDE, CHROMATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0304 STEP NO--UR/0076/70/044/001/0236/0238

CIRC ACCESSION NO--AP0113234

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0113234

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DS. AND VISCOSITIES OF SATD. AQ. SOLNS. AT 20-80DEGREES OF THE FOLLOWING COMPDS. WERE DETD.: AL(NO SUB3) SUB3, COSO SUB4, CUCL SUB2, CUSO SUB4, H SUB3 BO SUB3, KAL(SO SUB4) SUB2, KCL, K SUB2 CR SUB2 O SUB7, K SUB3 (FE(CN)SUB6), K SUB4 (FE(CN)SUB6),KI, KNO SUB3, LICL, MGCL SUB2, NACL, NA SUB2 CO SUB3, NAHCO SUB3, NAHO SUB3, NANO SUB2, NAOH, NA SUB2, SO SUB4, NA SUB2 SO SUB3, NA SUB3 PO SUB4, NA SUB4 AL(SO SUB4) SUB2, PBCL SUB2, PB(NO SUB3)SUB2, AND SUCROSE. IN GENERAL THE DS. OF THE SATD. SOLNS. INCREASED AND THE VISCOSITIES DECREASED WITH INCREASING TEMP.

UNCLASSIFIED

USSR

UDC 621.791.72:621.9-536.546.621

BONDAREV, A. A., VOROPAY, N. M., RABKIN, D. M., Ye. O. Paton Electric Welding Institute, STEPANOV, V. F., POSTNIKOV, V. P., Moscow Oblast

"Cathode Ray Welding of Spherical Containers of Aluminum Alloys"

Kiev, Avtomaticheskaya Svarka, No 5, May 1972, pp 44-47

Abstract: The features of cathode ray welding of vacuum tight joints were studied as applicable to spherical containers of AMG6 and D20-1 aluminum alloys. Welded joints produced at the optimal welding modes showed no pores, cracks or other defects. The β phase was finely and evenly dispersed. In contrast to argon-arc welding, the near-seam zone had practically no areas of recrystallization with enlarged base-metal grains. The mechanical properties of joints produced by cathode ray welding were universally superior to those produced by argon-arc welding. The stability of the results of mechanical tests was high; the strength factor of the joints was greater than with argon-arc welding.

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USSR

TAVADZE, F. N., Academician, Georgian Academy of Sciences, and POSTNIKOV, V. S., Professor of Physics and Mathematics, and GORDIENKO, L. K., Doctor of Technical Sciences, Resp. Eds.

Analiticheskiye vozmozhnosti metods vnutrennego treniya (The Analytical Possibilities of the Internal Friction Method), Moscow, "Nauka," 1973, 195 pp

Translation of Annotation: Review articles of Soviet and foreign scholars who participated in the symposium devoted to "Analytical Possibilities of the Internal Friction Method" are presented. The symposium was held in Tbilisi in October, 1971. The papers consider problems of research in relaxation processes in solid bodies, interaction between flux defects, phase transformations, superconductive exchanges, the mechanisms of internal friction (damping) and other questions. The collection is intended for researchers and practical metallurgists, specialists in solid state physics, and teachers and students at technical institutions of higher learning.

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TAVADZE, F. N., The Analytical Possibilities of the Internal Friction Method, Moscow, "Nauka," 1973, 195 pp

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USSR

POSTNIKOV, V. S., MILOSHENKO, V. YE., ZOLOTUKHIN, I. V., SHUNIN, G. YE., and SHUKHALOV, YE. I., Voronezh Polytechnic Institute

"Effect of Imperfections on Internal Friction of Superconductors During n-s Transition"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 11, Nov 72, pp 3447-3448

Abstract: The article reports on further studies of the low-frequency internal friction of superconductors by the method of flexural vibrations. Previous articles by the authors reported that the internal friction peak Q^{-1} is detected during the n-s transition and its value does not vary appreciably with a change in the number of impurities in polycrystalline niobium. The present article studies the effect of extended structural imperfections on this peak in polycrystalline and single-crystal specimens of niobium. The Q^{-1} peak of a 99.8 percent deformed polycrystalline specimen has a width that considerably exceeds the width of the peak in a single crystal with a deformation of several percent. No peak is observed experimentally in a single-crystal specimen annealed at 950° C for an hour. No Q^{-1} peak is observed in

USSR

POSTNIKOV, V. S., et al., Fizika Tverdogo Tela, Vol 14, No 11, Nov 72, pp 3447-3448

perfect single crystals, but it is observed in polycrystalline specimens (deformed and annealed) and single crystals with slight deformation, reaching a width of several tenths of a degree. Conclusion: Extended structural imperfections are responsible for such a substantial expansion of the temperature range; theoretical works have failed to consider the effect of these on the character of fluctuations.

2/2

USSR

UDC 548.5:539.4

POSTNIKOV, V. S., AMMER, S. A., DROZHZHIN, A. I., Voronezh Polytechnical Institute

"Internal Friction and Strength of Germanium Whiskers"

Moscow, Kristallografiya, Vol 18, No 3, May/Jun 73, pp 658-659

Abstract: An investigation was made of the influence which the transverse dimensions of germanium whiskers have on their strength and internal friction Q^{-1}. The crystals were grown by the method of chemical transport reactions. Crystals of p-conductivity with orientation of the growth axis in direction <111> were investigated with a diameter of 2-50 μm and a working length of about 1.5 mm. Specimens with both smooth and defective surfaces were studied. The measurements were made at room temperature and at approximately 760°C in a vacuum of about $5 \cdot 10^{-5}$ mm Hg. Strength decreased with increasing thickness. Specimens with surface defects had low strength. Q^{-1} was minimum at room temperature and independent of thickness. At 760°C, Q^{-1} increased with decreasing thickness. Internal friction was considerably reduced by additional annealing at 850°C for one hour.

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USSR

UDC 539.67

YEVSYUKOV, V. A., ZOLOTUKHIN, I. V., LEBEDINSKIY, V. S., PESIN, M. S., POSTNIKOV, V. S., and SHAPSHAKOV, I. M.

"Internal Friction in Phase Transformation in TiNi Intermetallic Compound"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 163-165

Abstract: The nature of the phase transformation in an equiatomic TiNi compound is studied by methods of internal friction, electrical resistance, and dilatometric analysis. The presence of some peaks on the internal friction temperature dependence curve is reported and their features are discussed. The energies of the activation processes are determined. It is assumed that the internal friction peak at 16°C is governed by the duffusion-free phase transformation. Data on internal friction, electrical resistance, and linear characteristics coincide well and confirm the assumed nature of the processes. 3 figures, 6 references.

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USSR UDC 539.67

ARTYEMENKO, A. G., LEVIN, Yu. N., MASLENNIKOV, E. M., PESIN, M. S., and POSTNIKOV, V. S.

"Mechanism of Energy Absorption in Diffusion Shape Variation of Impurities in Binary Alloys"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 159-163

Abstract: A short description and an experimental verification by the internal friction method of the energy absorption mechanism in diffusion shape variation of impurities in binary alloys are presented.

Alloys of Cd-Ge, Zn-Ge, and Bi-Ag eutectic composition systems were used as impurity-containing alloys. Peaks related to diffusion, occurring along the impurities boundaries as a result of the onset of an inhomogeneous stress state during measurements, were obtained on internal friction amplitude-dependence curves.

The results obtained confirm the theory of the impurities diffusion shape variation mechanism developed earlier. 2 figures, 6 references.

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USSR

UDC 539.4.019.3

BELEN'KIY, V. S., POSTNIKOV, V. S., and SHARSHAKOV, I. M.,
Voronezh

"Low-Temperature Internal Friction of Magnesium and Its Alloys With Zirconium and Manganese"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71, pp 162-165

Abstract: The internal friction of single crystals and polycrystals of magnesium and the alloys Mg-0.83Mn, Mg-0.35Zr, and Mg-0.52%Zr were studied in the temperature range 83-298°K. The Q(T) curves of the deformed crystals show three peaks corresponding to temperatures of 150-188 and 250-260°K. The activation energy of the first two peaks is 0.31 and 0.47eV, respectively. It is assumed that these peaks results from the interaction of point defects with dislocations. The activation energy of the peak at 250-260°K is 1.32eV; the nature of this peak is related to relaxation of stresses at twinning boundaries.

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USSR

UDC 539.4.019.3

POSTNIKOV, V. S., SHARSHAKOV, I. M., and KOMAROV, V. G., Voronezh

"Elastic Properties of Single Crystals of Cu-Al-Ni Alloys"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 72, pp 98-102

Abstract: A study was made of the microstructural changes in single crystals of the Cu-Al-Ni alloy in the process of deformation. The alloy was grown by the Bridgeman method in containers of spectrally pure graphite in an argon atmosphere. The high elasticity level of β_1 -single crystals of Cu-Al-Ni alloys is dependent on the $\beta_1 \rightleftarrows \gamma'$ -transformation in the deformation process in a wide range of temperatures and stresses. The deformation in γ' -crystals is realized by means of twinning, which appears to be elastic by a certain orientation of γ'-crystals. The correlation of the investigation results with data of amplitude-dependent internal frictions of β_1 - and γ'-phase is discussed by reference to diagrams. The internal friction level in the temperature region of the γ' -phase is considerably higher than in the β_1 -phase region, which is explained by the motion of twin crystal boundaries. In the temperature range of the β_1 -phase occurrence a dissipation of the oscillation energy is almost not observed, since the

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USSR

POSTNIKOV, V. S., et al., Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 72, pp 98-102

action of outer shearing stresses causes the produced elastic martensite crystals to disappear. Three illustrations, seven bibliographic references.

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USSR

UDC 539.4.019.3

POSTNIKOV, V. S., ZOLOTUKHIN, I. V., and NETUSOV, YU. K., Voronezh

"The Damping of Mechanical Oscillations and the ΔE-Effect in Thin Nickel Films"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 1, Jan-Feb 72, pp 161-163

Abstract: A study was made of the damping of mechanical oscillations and the change of the modulus of elasticity in nickel films 1000 Å thick. The very high damping was found to depend on large surfaces of the grain boundaries. No change in the damping level in the magnetic field was observed for the films. The ΔE-effect changes by 35%, which exceeds considerably the usually observed values in solid nickel specimens. In solid polycrystal nickel specimens the change in the ΔE-effect by magnetization up to saturation (600 oer) does not exceed 6%, but in thin-layer nickel condensates it changes by 35% even in a field of up to 200 oer. The reason for this abrupt change of the ΔE-effect is not clear. Two illustrations, four bibliographic references.

USSR

UDC 539.67+621.317.343

MILOSHENKO, V. Ye., ZOLOTUKHIN, I. V., and POSTNIKOV, V. S., Voronezh Polytechnic Institute

"Device for Measuring the Internal Friction and the Electric Resistance of Thin Foils in the 4.2--300 °K Temperature Interval"

Moscow, Pribory i Tekhnika Eksperimenta, No 1, Jan-Feb 72, pp 218—220

Abstract: A device for measuring the internal friction Q^{-1} and the electric resistance of thin films and foils of 1—200 μ thickness in the temperature interval of 4.2—300 °K is described by reference to the schematic diagram of the cryostat, the gas communication schema, and the block diagram. By the described method, the internal friction can be measured in the range of helium temperatures correct within 0.5% at 4.2 °K and correct within 1% within 300 °K. The electric resistance is measured by the compensation method using the P-306 low-ohmic potentiometer

-USSR-

MILOSHENKO, V. YE., et al., Pribory i Tekhnika Eksperimenta, No 1, Jan-Feb 72, pp 218-220

and the M21/4 galvanometer. The Q-1 temperature dependences of polycrystalline vacuum condensates of a thin copper film and of the internal friction and the electric conductivity of a niobium foil, showing a Q-1 maximum at the transition temperature to the superconductivity state, are illustrated. Five illustr., four biblio. refs.

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USSR

UDC: 669.3:539.67

POSTNIKOV, V. S., SHARSHAKOV, I. M. and KOMAROV, V. G., Voronezh Polytechnic Institute

"Internal Friction in Single Crystals of Copper-Aluminum-Nickel Alloys"

Sverdlovsk, Fizika metallov i metallovedeniye, Vol 33, No 1, Jan 72, pp 222-224

Abstract: The purpose of this paper was to analyze the behavior of internal friction during thermoelastic $\beta \rightleftarrows \gamma'$ martensite transformation as well as the to study the effect of deformation and quenching rate on certain kinetic characteristics of transformations in Cu-Al-Ni alloys. Use was made of specimens grown by the Bridgeman method in containers from spectrally pure graphite in an argon atmosphere. It appears that the temperature position of the peak of the internal friction phase depends on the quenching rate and tempering time at 200-300°C. A decrease of the quenching rate is followed by peak displacement toward higher temperatures, i.e., temperature displacement at the beginning of both direct and reverse

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USSR

POSTNIKOV, V. S., et al, Fizika metallov i metallovedeniye, Vol 33, No 1, Jan 72, pp 222-224

transformations. At a cooling rate of 2-3 deg/sec, the martensite transformation is inhibited. Metallographic analysis indicates the emergence of various quenching-generated structures due to changes in the cooling rates. A increase in the order of magnitude may lead to marked changes in transformation temperatures. (2 illustrations, 8 bibliographic references).

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USSR

UDC 539.67

POSTNIKOV, V. S., ZOLOTUKHIN, I. V., BURMISTROV, V. N., and SHARSHAKOV, I. M.

"Internal Friction Governed by Relaxation on Twinning Boundaries in Indium + 10% Tallium Alloy"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 152-156

Abstract: It is shown that single crystal samples of In-Tl alloys with a face-centered tetragonal lattice have high damping properties. Single crystals in which the twinning direction is normal to the sample axis have the highest damping value. The observed peaks on internal friction temperature dependence characteristics near the liquid nitrogen temperature are governed by a relaxation along the twinning boundaries. The internal friction peaks at higher temperatures are related to Zener relaxation and diffusion of excessive tallium atoms from packing imperfections into the matrix. The magnitudes of peaks depends substantially on single crystal orientation. 4 figures, 8 references.

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USSR UDC 539.67

POSTNIKOV, V. S., MESHKOV, S. I., KOSILOV, A. T., YEL'KIN, Yu. M., and KOROTAYEV, Ye. A.

"On Amplitude Dependence of Internal Friction in Uniaxially Stretchable Metals"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 76-79

Abstract: Results of a study on internal friction in aluminum are presented. The data obtained are discussed on the basis of concepts on thermally activated overcoming of short-range barrier by dislocations, taking into account the supplementary periodical stresses in slip planes, produced by torsional vibrations.

A relation is obtained which characterizes the amplitude dependence of Q^{-1} in the tensile process. The magnitude of activation volume for a proposed mechanism is determined. The activation volume vs. elongation velocity is plotted. 3 figures, 7 references.

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USSR

UDC 539.67

MESHKOV, S. I., and POSTNIKOV, V. S.

"On the Problem of Internal Friction Background in Solid State Bodies"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka", 1970, pp 43-47

Abstract: Two phenomenological approaches to a description of the internal friction background are considered.

Physical mechanisms of relaxation processes responsible for the internal friction background are described briefly. It is shown that weakly singular complete functions and the corresponding distribution function may be obtained from a consideration of mechanisms of specific relaxation processes.
11 references.

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USSR

UDC 539.67

BELYAVSKIY, V. I., DARINSKIY, B. M., and POSTNIKOV, V. S.

"Orientational Dependence of Dislocation Internal Friction"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials"), Moscow, Izd-vo "Nauka", 1970, pp 32-37

Abstract: The pliability defect tensor, governed by the motion of dislocations in an arbitrary slip system, is calculated. Cases of boundary and spiral motion in body-centered and face-centered cubic lattices are considered. It is shown that in single crystals the internal friction has an anisotropic nature. The effect of processing the material on internal friction orientation dependence is discussed, and the results of theoretical calculations and experimental data are compared. 1 table, 1 figure, 6 references.

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Miscellaneous

USSR

UDC 539.67

POSTNIKOV, V. S.

"Mechanisms of Internal Friction in Metals"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka", 1970, pp 7-25

Abstract: Mechanisms of the energy dissipation of elastic oscillations in idealized crystal lattices and lattices containing various defects (point, linear, flat, and others) are considered. Internal friction in phase transformations was studied. An evaluation is given of contribution to the general internal friction background governed by the functioning of mechanisms. 57 references.

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USSR

UDC 539.67

POSTNIKOV, V. S., BELKO, V. N., and SHARSHAKOV, I. M.

"Magnetomechanical Damping in Cobalt-Nickel Alloys"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 191-198

Abstract: A study is made of the amplitude-dependent internal friction of nickel, cobalt, and cobalt-nickel alloys in a wide range of temperatures and deformation amplitudes. It is shown that the irreversible displacement of domain boundaries contributes mainly to damping. However, the contribution magnitude depends substantially on alloy chrystalline structures, although alloys with FCC structure have a substantially larger damping value than alloys with a hexagonal close-packed structure. Phase hardening has a strong influence on damping. Prolonged annealing at a temperature close to phase transformation improves damping in alloys with a hexagonal close-packed structure. A peak appearing on internal friction characteristics of alloys with a FCC structure is explained by two simultaneous processes, i.e., magneto-mechanical hysteresis and micro-plastic deformation. 8 figures, 9 references.

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USSR

UDC 537.226.33:534.286

POSTNIKOV, V. S., KAVERIN, L. D., PAVLOV, V. S., and TURKOV, S. K.

"Internal Friction in Single Crystals of Lithium Niobate at Hertz Frequencies"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 35, No 9, Sep 71, pp 1918-1920

Abstract: The authors cite the results of investigating low-frequency internal friction and shift modulus of monocrystalline $LiNbO_3$ in the temperature range of 4.2-400° K. They found two relaxation peaks at temperatures of 300° K (peak A) and 130° K (peak B) on the temperature curve of the internal friction of polydomain samples. The A peak does not exist in the monodomain samples. The activation energy of peaks A and B is 0.7 and 0.14 eV respectively. The authors conclude that peak B is the result of point defects generated in the annealing process. Peak A is explained by the interaction of point defects with 180°-domain boundaries. The experimental results agree quite well with the theoretical ones. The authors use three graphs to illustrate their findings. The article contains 3 illustrations and 5 bibliographic entries.

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USSR

UDC 669.15.018.44

NOVICHKOV, P. V., POSTNIKOV, V. S., and RYASKOV, S. A.

"A Study of Ways of Increasing the Low-Temperature Relaxation Stability of Steels of the Austenitic Class"

V. sb. Strukturn. i razmern. stabiliz. met. i detaley mashin (Structural and Dimensional Stabilization of Metals and Machine Parts -- Collection of Works), Moscow, 1970, pp 82-91 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I616 by V. Olenicheva)

Translation: A study was made of the relaxation stability and low-temperature creep of Kh12N2T2 (EP452) and Kh12N22T3MR (EI696M) austenitic steels with intermetallide strengthening which were subjected to thermomechanical treatment (TMT), as well as austenitic steel with carbide strengthening Kh18N10T after deformation and aging. The elastic aftereffect method was used to obtain numerical criteria characterizing relaxation stability. The optimum relaxation stability was shown by the following treatment regimes: for steel EP452 -- two-time TMT (hardening +1.5% deformation X 10 hr X 650° + 1.5% deformation X 10 hr X 650°; for steel EI696 M -- three-time TMT (hardening +1.5% deformation X 10 hr X 650° +1.5% deformation X 10 hr X 650° +1.0% deformation X 10 hr x 650°); for steel Kh18N10T -- strain aging (hardening + 5% deformation +600° X 1 hr). Four illustrations. Bibliography with 26 titles. Five tables. i/1.

USSR

UDC 539.4.019.3

BELEN'KIY, V. S., POSTNIKOV, V. S., and SHARSHAKOV, I. M., Voronezh

"Low-Temperature Internal Friction of Magnesium and Its Alloys With Zirconium and Manganese"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 2, Mar-Apr 71, pp 162-165

Abstract: The internal friction of single crystals and polycrystals of magnesium and the alloys Mg-0.83Mn, Mg-0.35Zr, and Mg-0.52%Zr were studied in the temperature range 83-298°K. The Q(T) curves of the deformed crystals show three peaks corresponding to temperatures of 150-188 and 250-260°K. The activation energy of the first two peaks is 0.31 and 0.47eV, respectively. It is assumed that these peaks results from the interaction of point defects with dislocations. The activation energy of the peak at 250-260°K is 1.32eV; the nature of this peak is related to relaxation of stresses at twinning boundaries.

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USSR UDC 539.23

BELONOGOV, V. K., ZOLOTUKHIN, I. V., IYEVLEV, V. M., and POSTNIKOV, V. S., Voronezh

"Production of Single-Crystal Aluminum Films on Mica"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 146-147

Abstract: The authors are studying conditions for the production of single-crystal films on mica by condensation in a vacuum of up to $1 \cdot 10^{-5}$ mm Hg. Condensation onto a surface prepared by vacuum cleavage in vapors of the metal permits the production of single-crystal films at a substrate temperature of 450° C and a residual pressure below $5 \cdot 10^{-2}$ mm Hg. The deposition rate is at least 150 Å/sec. The thickness of the studied films is 500-10,000 Å. The present article studies the structure of aluminum films 500-10,000 Å thick, obtained by vacuum condensation onto mica (muscovite), for the purpose of determining factors affecting the growth of single-crystal aluminum films. In order to estimate

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USSR

BELONOGOV, V. K., et al., Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70, pp 146-147

the effect of residual gases on film structure, condensation was carried out in a vacuum of $5 \cdot 10^{-2}$ mm Hg and $1 \cdot 10^{-5}$ mm Hg onto the cleavage surface of mica prepared in air and in vacuum. A comparison of the structure of films obtained at the same substrate temperatures for air and vacuum cleavage indicates that the growth of aluminum films on mica is susceptible to the action of residual gases on the substrate. Vacuum cleavage in the presence of the metal vapors and at high condensation rates reduces their action to a minimum even at a residual pressure of $5 \cdot 10^{-2}$ mm Hg. This makes it possible to obtain single-crystal films under such conditions.

2/2

1/2 050 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--GROWTH OF METALLIC FILMS IN CONDENSATION FROM AN ATOMIC BEAM IRRADIATED WITH ELECTRONS -U-

AUTHOR-(04)-POSTNIKOV, V.S., ZOLOTUKHIN, I.V., MORGUNOV, V.N., YEVLEV, V.M.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, FEB. 1970, 29, (2), 441-442

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--EPITAXIAL GROWTH, METAL FILM, METAL VAPOR DEPOSITION, GAS IONIZATION, ELECTRON BEAM, GOLD, SILVER, ALUMINUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1822 STEP NO--UR/0126/70/029/002/0441/0442

CIRC ACCESSION NO--AP0129190

UNCLASSIFIED

2/2 050 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0129190

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF IONIZED METAL ATOMS ON THE EPITAXIAL GROWTH OF FILMS CONDENSED FROM THE GAS PHASE WAS STUDIED BY IRRADIATING EVAPORATED ATOMIC BEAMS OF AU, AG, AND AL FROM THE SIDE WITH AN ELECTRON BEAM, SO AS TO CREATE A PROPORTION OF IONIZED PARTICLES PRIOR TO DEPOSITION. THE ELECTRON IRRADIATION GREATLY PROMOTED THE EPITAXIAL GROWTH OF THE METALLIC FILMS ON ROCK SALT, THE IONIZED PARTICLES HAVING A FAVOURABLE EFFECT ON COALESCENCE AND CONTINUITY.

UNCLASSIFIED

GLASS + CERAMICS

UDC 677.52:539.67

USSR

POSTNIKOV, V. S., IVANOV, N. V., and BALASHOV, YU. S., Voronezh Polytechnic Institute

"Internal Friction and Shear Modulus of Thin Glass Fibers"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 6, No 7, Jul 70, pp 1327-1330

Abstract: The article describes a device created by the authors which makes it possible to use the internal friction method to study the physical properties of thin glass fibers from 5 to 100 microns in diameter. The device is based on a low-frequency torsion micropendulum and makes it possible to study the temperature dependence of internal friction and shear modulus in the -70 to 800° C temperature range with automatic recording of vibrations. A study of the internal friction and shear modulus of sodium silicate, sodium aluminosilicate (Al/Na = 1), and alkali-free aluminoborosilicate fibers showed that

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USSR

POSTNIKOV, V. S., et al., Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 6, No 7, Jul 70, pp 1327-1330

there is a qualitative similarity in the relaxation spectra of macro- and microspecimens. Quantitative differences which are found are evidently due to the more open structure of thin glass fibers.

2/2

Acc. Nr. AP0048291 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR 0472

103145s Microplastic deformation of iron and nickel under the influence of ultrasound. Balalaev, Yu. F.; Gaponov, M. A.; Postnikov, Ye. S. (USSR). *Fiz. Khim. Obrab. Mater.* 1970, (1), 108–13 (Russ). The microplastic deformation in Fe and Ni has been examd. as produced by ultrasound at the initial, quasi-stationary, and self-accelerating (avalanche) stages. Data are presented on the internal grain slip, grain boundary dislocation, boundary migration, and the formation of the substructure and new grains in these metals at a frequency of ~23 kHz and heating at 20–1000°.
V. Machacek

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POSTNIKOVA, G.B.

UNCLASSIFIED

DIANE

SO: SELECTED AEROSPACE MEDIC FACILITIES
PCS - 87
JUNE 71

SECTION III

Name: Institute of Biophysics, Pushchino

Description:

Biophysics

(U) During this quarterly reporting period, 13 new articles were located from the Institute of Biophysics at Pushchino. On the basis of these articles, it was possible to associate 19 new persons with the institute. These persons are listed below together with the subjects and dates of the articles:

All biophysics

Basurmanov, O. K.	endocrine system	1970 (17)
Berestovskiy, G. N.	phospholipids	1970 (18)
Gazlyev, A. I.	DNA	1970 (19)
Ivannikova, A. G.	plant physiology	1969 (20)
Kiselev, Ye. Ye.	muscle physiology	1970 (21)
Kravchenko, N. A.	EPR spectra	1970 (22)
Narimanov, A. A.	radiation effects	1970 (23)
Panov, A. A.	endocrine system	1970 (17)
Pasoyan, V. G.	EPR spectra	1970 (22)
Porotikov, V. I.	muscle physiology	1970 (21)
Postnikova, G. B.	chromatography	1970 (24)
Razhin, V. D.	phospholipids	1970 (18)
Revin, A. F.	radiation effects	1970 (23)
Sukhoruchkina, L. V.	chromatography	1970 (24)
Trinchar, K. S.	plant physiology	1969 (20)
Vasiloy, Yu. V.	radiation effects	1970 (23)
Zaikin, A. N.	hydrogen peroxide	1970 (25)
Zakrzhevskaya, D. T.	DNA	1970 (19)
Zuzin, A. M.	DNA	1970 (19)

USSR

UDC: 543.544

POSTNIKOVA, G.B., and SUKHORUCHKINA, L.V., Institute of Biological Physics, Pushchino, Academy of Sciences USSR

"Paper and Thin-layer Chromatography of Organic Derivatives of Phosphorus (III,V) Acids"

Moscow, Zhurnal Analiticheskoy Khimii, Vol 25, No 4, Apr 70, pp 772-787

Abstract: A review with 85 references. Methods for separation on paper and in a thin sorbent layer are suitable for the analysis of organic phosphorus compounds of various types, including the highly reactive types. Chromatographic separation is simple and rapid, selective and sensitive. It is highly expedient with small amounts of materials, especially when they are of low stability.

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POSTNIKOVA, L. K.

SOJPRS 54740
30 DEC 71

UDC: 616.9-083.88

SCOPE AND NATURE OF PEDIATRIC CARE RENDERED IN CONNECTION WITH INFECTIOUS PATHOLOGY

[Article by L.K. Postnikova, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko, Moscow; Moskow, Sovetskoye Zdravookhraneniye, Russian, No 11, 1971, submitted 8 June 1971, pp 15-19]

The control of infectious diseases occupies a considerable place in the work of district children's polyclinic workers, physicians and registered nurses. Various monological forms require various preventive, diagnostic, and therapeutic measures. Hence it is obvious that there must be a differentiated approach to the scientific substantiation of the scope and nature of work of district pediatricians and nurses as related to different infectious diseases.

The literature on this subject is very limited. We can only mention the work of M.A. Bogomol'skiy (1966) and the monograph edited by I.D. Bogatyrev (1967) in which information is given about the mean number of pediatrician visits without consideration of the nature and frequency of such visits as related to different nosological forms of infectious diseases. K.A. Gashimova (1955) demonstrated (on very limited material) the number of visits to pediatricians as related only to a few nosological forms.

Our investigation constituted a part of the development of the scientific project of determination of the scope and nature of extramural medical care related to infectious diseases worked on in 1968-1970 under the guidance of D.B. Rozenfel'd, candidate of medical sciences, at the All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko. The method used for this investigation was published previously.*

The main objective was to determine the scope and nature of extramural pediatric care rendered in the polyclinic districts in connection with infectious or suspected infectious disease. The experiment was conducted in

*Sovetskoye Zdravookhraneniye, No 12, 1966, p 13.

POSTNIKOVA, L. K.

SO: JPRS 55015
25 Jan 1972

UDC: 614.4(47-21):658.381.015.2

AVERAGE TIME SPENT BY THE STAFF OF EPIDEMIOLOGICAL DEPARTMENTS OF SANITARY AND EPIDEMIOLOGICAL STATIONS ON PERFORMING EXTRAMURAL EPIDEMIC CONTROL MEASURES IN MEDICAL DISTRICTS OF URBAN POLYCLINICS

[Article by D.M. Rozenfel'd, Candidate of Medical Sciences, Z.F. Samoylova, L.K. Postnikova, V.V. Stepanov, N.G. Kravchenko, All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko, Moscow, Severtskoye Zdravookhraneniye, Russian, No 12, 1971, pp 30-34]

The continuous perfection of forms and methods of epidemic control work and optimum planning thereof depend largely on scientific substantiation of the demands of the people with regard to various forms of extramural medical care related to infectious or suspected infectious diseases. Determination of special aspects of this important problem is to determine the required scope and nature of extramural measures performed by epidemiologists and their assistants at SES [sanitary and epidemiological stations]. Determination of annual mean work time spent on performing data combined with investigation of annual mean work time spent on performing the necessary measures by epidemiologists and their assistants is a mandatory prerequisite for scientifically substantiated estimates pertaining to manpower and resources of the epidemic control service.

Previously we published a method for scientific investigations on the subject of determination of the Scope and Nature of Extramural Medical Care for Urban Population as Related to Cases of Infectious and Suspected Infectious Diseases, as conducted in 1968-1970 at the All-Union Scientific Research Institute of Social Hygiene and Public Health Organization imeni N.A. Semashko. The present report we submit the results of investigations of work time spent by epidemiologists and their assistants on performing different epidemic control measures and nets thereof. This study was conducted at several SES in Odessa and Kherson staffed by epidemiologists and assistants in accordance with the prevailing established staff quotas. The set of measures related to services to patients in the polyclinic districts. The chief method used was timing. Intermediate medical personnel, mainly medical fieldsmen with a tenure of at least three years, conducted the time studies.

1. D.M. Rozenfel'd, et al., Sov. Zdravookhraneniye, No 12, 1966, p 13.

USSR

POSTNIKOV, N. N., POSTNIKOVA, N. V.

"One Method of Eliminating Redundancy in Messages"

Nauch. Tr. Mosk. Tekhnol. In-t Legk. Prom-sti [Scientific Works of Moscow Technological Institute for Light Industry], 1972, No 38, pp 63-69 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V475, by E. Gabidulin).

Translation: A study is made of approximation of a function in a certain interval by a second power polynomial. The quantitative data on effectiveness of this method of elimination of redundancy are not presented.

1/1

USSR

UDC 621.373.826:550.3

GEL'FER, E. I., KIYAZEVA, M. M., POSTNIKOVA, T. A., and CHEREMUKHIN, A. M.

"Correlation of Laser Beam Focusing Intensity"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 250-253 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D379)

Translation: The spatial structure of the intensity in the focal plane of a focused laser beam passing through a layer of turbulent atmosphere is investigated. Two identical positive images of the beam cross section are put in a two-dimensional optical correlometer to permit obtaining the correlation function of the intensity by using information regarding the intensity value over the whole beam cross section. The correlation function was measured for five different distances. The obtained radii of the correlation of intensity in the focal plane are found, in their order of magnitude, to be closer to the intensity correlation radius for an infinite plane wave (about $\sqrt{\lambda h}$) than to the diffraction dimension $(\lambda/d)L$.

A. K.

1/1

USSR

UDC: 621.785.79:669.14.018.8

KONOVALOVA, K. M., KOVRIGIN, A. A., POSTNIKOVA, T. I., Engineers, Kuznetsk Metallurgical Combine

"Effect of $\alpha \rightleftharpoons \gamma$-Conversion on the Corrosion Resistance of OKh17N7Yu1 Steel"

Moscow, Stal', No 7, Jul 72, pp 649-650

Abstract: It is shown that intergranular corrosion in OKh17N7Yu1 high-strength stainless steel is connected with structural changes which take place during heat treatment. One-time high-temperature intermediate tempering at 740-780°C produced 55.8% α-phase, increasing the tendency of the steel toward intergranular corrosion. A second tempering at the same temperature increased the amount of α-phase to 82.6% with more uniform distribution of the α-phase (martensite) within the grain and on the grain boundary. After such heat treatment, the corrosion properties of the steel conform to GOST State Standards 6032-58.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202520009-9"

USSR

UDC 621.385.6: 621.385.032.26

POSTNOV, E.V.

"To The Problem Of Electrostatic Focusing Of Power Electron Beams In Klystrons"

V sb. Vopr. elektron. tekhniki (Problems Of Electronics Technology-- Collection Of Works), Saratov, 1970, pp 50-55 (from RZh--Elektronike i yeye primeneniye, No 6, June 1970, Abstract No 6A130)

Translation: The characteristics of electrostatic focusing in power klystron amplifiers, and the difficulties in the creation of similar systems are considered. A method and devices are proposed which in the opinion of the author substantially assure the development of power klystrons with electrostatic focusing. Summary.

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Transformation and Structure

USSR

UDC 669.27.017

VEDERNIKOVA, V. A., MIL'MAN, Yu. V., POSTNOV, L. M., POPOV, A. P., SLENZAK, G. YE., TREFILOV, V. I., and SHUMILOV, I. M., Institute of Metal Physics, Academy of Sciences, Ukr SSR

"Structural Changes During Annealing of a Precipitation Hardened Tungsten Alloy"

Kiev, Metallofizika, No 40, 1972, pp 45-49

Abstract: Translucent electron microscopy, metallography, and diffraction line width measurements were used to study the structural changes resulting from the annealing of deformed tungsten in which 0.2% ZrC had been added during melting. At up to 1800°C a dispersed cellular structure is preserved in the alloy along with a structure stabilized by precipitations of a second phase. These were identified as ZrC in an x-ray investigation of the deposit obtained during electrochemical dissolving of the tungsten. In isolated sections of the alloy, with an increased density of second-phase particles, the cellular structure was preserved even after annealing at 2340°C. Increased recrystallization temperature is accompanied by increased heat resistance. 4 figures, 9 bibliographic references.

1/1

POST NOV, V.A.

DEPARTMENT OF THE NAVY
NAVAL INTELLIGENCE SUPPORT CENTER
TRANSLATION DIVISION
4301 SUITLAND ROAD
WASHINGTON, D.C. 20390

CLASSIFICATION: UNCLASSIFIED

APPROVED FOR PUBLIC RELEASE, DISTRIBUTION UNLIMITED

TITLE: Application of the Method of Finite Elements to the Calculation of Ship Structures

Ispol'zovanie metoda konechnykh elementov dlya raschota sudovykh perekrytiy

AUTHOR(S): M[illegible]tuktnov, V. A., Zherkhurin, I. Ya., and Khegai, S. Kh.

PAGES: 12

SOURCE: Sudostroyeniye, No. 6, 1971
Pages 11-15

ORIGINAL LANGUAGE: Russian

TRANSLATOR: DM

NISC TRANSLATION NO. 1420

APPROVED [signature]

DATE 19 March 1971

USSR

UDC 547.13

NESMEYANOV, A. N., Academician, POSTNOV, V. N., LESHCHEVA, I. F., SURKOV, B. A., and SAZONOVA, V. A., Moscow State University imeni M. V. Lomonosov

"Ferrocenylvinylcarbonium Ions"

Moscow, Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 858-861

Abstract: The vinylog of the diphenylferrocenylcarbonium ion during its formation under goes an allyl shift to give an α-ferrocenylcarbonium ion. Since the p-dimethylamino group is a strong carbonium ion stabilizer, the authors undertook to compare the part played by the p-dimethylaminophenyl and ferrocenyl groups simultaneously in the stabilization of the allyl cation. The tetraphenylborate of the vinylog of p-dimethylaminodiphenylferrocenylcarbonium was obtained from β-ferrocenylvinyl-p-dimethylaminodiphenylcarbinol by precipitation with sodium tetraphenulborate in glacial acetic acid. The salt was bound by its α-carbon atom (relative to ferrocene) with dimethylaniline in the p-position. To determine the structure of the resultant carbonium ion, spectra were taken of its salts -- tetraphenylborate and borofluoride, as well as the spectrum of β-ferrocenylvinyl-p-dimethylaminodiphenylcarbinol. The results indicate that the allyl cation reacts

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USSR

NESMEYANOV, A. N., et al., Doklady Akademii Nauk SSSR, Vol 200, No 4, 1971, pp 858-861

like a typical α-ferrocenylcarbonium ion with its α-carbon atom. This indicates localization of a significant part of the formed positive charge on the latter. The almost quantitative reaction on the α-carbon indicates the prevailing influence of the ferrocenyl group in the stabilization of the carbonium ion as compared with the p-dimethylamino group.

USSR

UDC 577.391+577.15.081

POSTNOVA, T. I., GLAZER, V. M., and SHESTAKOV, S. V., Moscow State University Imeni M. V. Lomonosov

"Repair of X-Ray-Induced Damage in DNA by Polynucleotideligase in Vitro"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 4, Dec 70, pp 976-978

Abstract: A study was conducted of possibilities of repairing single strand breaks in DNA induced by x-ray irradiation by the methodology based on phage transformation. The degree of damage and repair of DNA was determined by the level of biological activity. Even relatively low doses of x-rays lower considerably the transformation activity of DNA. Polynucleotideligase (PNL) has no effect on parent DNA but restores almost completely the activity of DNA deactivated by DNAase (which results in single strand breaks of the 5'P- and 3'OH-type). Incubation of irradiated DNA with PNL results in considerable increase of the transformation activity, which however does not exceed 50%. This may be due to the fact that other breaks occur -- such as 3'P- and 5'OH- which do not respond to PNL. A higher degree of inactivation lowers the repair capacity of PNL -- probably because of polystrand-type breaks.

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USSR

UDC 661.143

POSTOLOV, V. S., MANASHIROV, O. Ya., PANCHENKO, A. I.

"Chemical Composition of the Phases Formed in the Ternary System of Li_2CO_3-Ga_2O_3-$2GeO_2$"

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collection of Scientific Works of the All-Union Scientific Research Institute of Luminophors and Materials of Extreme Purity), 1972, vyp. 7, pp 5-11) (from RZh-Khimiya, No 6 (II), 1973, Abstract No 6L159)

Translation: A study was made of the processes occurring in binary systems of Li_2CO_3-Ga_2O_3 and Li_2CO_3-GeO_2 with heating in the air to 1,000°. The chemical composition of the phases was studied, and the conversion sequence in the ternary system of Li_2CO_3:Ga_2O_3:GeO_2 = 1:1:2 was investigated with heating in the air to 1,000°. The results of the x-ray studies of the compound $LiGaGeO_4$ formed in the ternary system are presented. The compounds based on gallates and gallosilicates of the alkali metals are used as the photo and cathodoluminophors. The bibliography has 16 entries.

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USSR UDC 533.6.011+533.69.01+533.662.013+533.6.521.661.013

IL'ICHEV, K. P., POSTOLOVSKIY, S. N., Moscow

"Calculation of Nonstationary Separation Plane Flow of a Nonviscous Fluid Over Bodies"

Moscow, Mekhanika zhidkosti i gaza, No. 2, Mar/Apr 72, pp 72-82

Abstract: Relationships are given for calculating the separation flow over bodies of arbitrary shape within the framework of the theory of an ideal fluid. Calculations of a plane flow over a circular cylinder and a plane plate are given as examples of a calculation by numerical methods using a computer. Ten initial assumptions were made concerning the motion of an ideal fluid under the presence in the flow of a line of tangential separation of the velocity-vortex sheet. It is concluded from the close agreement between the calculated kinematic picture of the flow and the actual picture and the satisfactory agreement between calculated and experimental quantitative characteristics of the flow that these assumptions on which the calculation of the separated flow was based and the theoretical relationship thus obtained reflect the essence of the process of separation flow of a nonviscous fluid over bodies in the automodeling region.

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1/2 017 UNCLASSIFIED PROCESSING DATE--20NOVTO

TITLE--NEW REAGENTS FOR THE PHOTOMETRIC DETERMINATION OF MERCURY -U-

AUTHOR-(04)-CHERKESOV, A.I., TONKOSHKUROV, V.S., POSTORONKO, A.I., RYZHOV, V.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 466-73

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOTOMETRIC ANALYSIS, CHEMICAL ANALYSIS, MERCURY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0380 STEP NO--UR/0075/70/025/003/0466/0473

CIRC ACCESSION NO--AP0126135

UNCLASSIFIED

2/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126135

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO NEW REAGENTS ARE SUGGESTED FOR DETN. OF HG(II) IN ACID MEDIA: AZOXINE ASH (4,(8,HYDROXY,7,QUINOLYLAZO),5,HYDROXY,2,7,NAPHTHALENEDISULFONIC ACID) (I) AND AZOXINE TS (DI,K 3,(8,HYDROXY,7,QUINOLYLAZO),1,5,NAPHTHALENEDISULFONATE) (II). THEIR SYNTHESIS IS DESCRIBED. I IS SOL. IN H SUB2 O AND ALC., LESS IN ME SUB2 CO. THE ACID SOLN. HAS A CINNAMON COLOR. II IS WELL SOL. IN H SUB2 O AND ALC. AN ACID SOLN. HAS YELLOW COLOR. THEIR ACID DISSOCN. CONSTS. OF THE OH GROUPS WERE DETD. SPECTROPHOTOMETRICALLY FOR I AS K SUB1 EQUALS 2.01 TIMES 10 PRIME NEGATIVE9, K SUB2 EQUALS 1.65 TIMES 10 PRIME NEGATIVE13, FOR II K SUB1 3.8 TIMES 10 PRIME9. HG REACTS WITH BOTH REAGENTS IN A 1:2 RATIO. THE MOLAR ABSORPTIVITIES FOR THE COMPLEXES ARE 3.54 TIMES 10 PRIME4 AND 4.38 TIMES 10 PRIME4 AT 540 NM, RESP. THE TOTAL INSTABILITY CONSTS. ARE, RESP., FOR I 2.37 TIMES 10 PRIME NEGATIVE12 AND FOR II 4.27 TIMES 10 PRIME NEGATIVE10. BEER'S LAW IS OBEYED FOR 1-6 MU G HG-ML NO SUB3 PRIME NEGATIVE, SO SUB4 PRIME2 NEGATIVE, ALK. EARTH AND ALKALI METALS, PB, AL, BE, ZN, CD, SC, IN, GA AND NOT VERY LARGE AMTS. OF FE(III), BI, CU, NI, AND CO DO NOT INTERFERE WITH THE PHOTOMETRIC DETN. OF HG; BOTH REAGENTS CAN BE ALSO USED FOR THE MERCURIMETRIC DETN.OF CHLORIDES. A PHOTOMETRIC METHOD IS SUGGESTED FOR THE DETN. OF SMALL AMTS. OF HG, WITH II AT PH 1.6 IN PURE SOLNS. AND IN ARTIFICIAL MIXTS. FE, CU, AND NI ARE MASKED WITH K OXALATE.

FACILITY: SARATOV PEDAGOG. INST., SARATOV, USSR.

UNCLASSIFIED

UDC 616.927.7-07

USSR

POSTOVIT, V. A., Doctor of Medical Sciences, and FEDULOVA, Ye. N., Candidate of Medical Sciences, Kiev Scientific Research Institute of Infectious Diseases, Ukrainian SSR Ministry of Public Health,

"Clinical Picture and Diagnosis of Paratyphoid Fever A"

Moscow, Klinicheskaya Meditsina, Vol 50, No 6, 1972, pp 135-138

Abstract: To study the clinical picture of paratyphoid fever type A, the course of the disease in 140 patients from 1950-1970 was analyzed. The need for such a study was due to incomplete description of the disease, ongoing incidence of cases, and difficulty in diagnosis. In laboratory diagnosis, the duration of pathogenic activity in blood, feces, urine and bile of the cases was established. Hemoculture was most indicative (75.8% positive reaction); Widal's reaction in 38.7% of the subjects was negative or its titer did not reach a diagnostic level. Clinical data reflected a polymorphism of symptoms. Most significant of these were an acute onset of the disease (72.1%), enlargement of the liver (89.3%) and spleen (71.4%), frequent early Rose rash on the skin (exanthema in 54.3%), relative bradycardia (65.9%), moderate leucopenia (55%) or normocytosis (30%). amd stomach pain (39%). Dyspeptic and catarrhal disturbances as well as fever were common. The researchers

USSR

POSTOVIT, V. A., and FEDULOVA, Ye. N., Klinicheskaya Meditsina, Vol 50, No 6, 1972, pp 135-138

noted three variants of the disease: typhoid (55.8%), catarrhal (19.3%), gastrointestinal (14.2%), and mixed (10.7%). Five percent of the ill had relapses and 7.8% had complications. A small number suffered intestinal perforations (0.7%) and intestinal hemorrhages (0.7%).

1/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--STRUCTURE OF COMPLEXES OF DELTA PRIME2,1,2,4,TRIAZOLINE,5,THIONES WITH AMINES -U-

AUTHOR-(03)-VLASOVA, L.A., MINKIN, V.I., POSTOVSKIY, I.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 372-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HETEROCYCLIC NITROGEN COMPOUND, HETEROCYCLIC SULFUR COMPOUND, COMPLEX COMPOUND, MOLECULAR STRUCTURE, DIPOLE MOMENT, MORPHOLINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1504 STEP NO--UR/0079/70/040/002/0372/0375

CIRC ACCESSION NO--AP0135165

UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0135165
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEXES FORMED BY 4,PHENYL,1,2,4,TRIAZOLINE,2,THIONE (I) AND DELTA PRIME2,1,2,4,TRIAZOLINE,5,THIONE (II) WITH AMINES EVIDENTLY HAVE STRUCTURE III, ON THE BASIS OF THEIR DIPOLE MOMENT VALUES, WHICH RANGE ONLY FROM 3.5 TO 4.07 D IN DIOXANE OR C SUB6 H SUB6. COMPLEXES OF I WITH MORPHOLINE, PIPERIDINE AND ET SUB2 NH HAD BEEN REPORTED EARLIER; THOSE OF II WITH MORPHOLINE M. 130DEGREES; WITH PIPERIDINE M. 132DEGREES. FACILITY: URA. POLITEKH. INST., SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 008 UNCLASSIFIED PROCESSING DATE--26OCT70

TITLE--COMPLEXING PROPERTIES OF STEREOISOMERS OF DIMERCAPTOSUCCINIC ACID -U-

AUTHOR-(04)-OKONISHNIKOVA, I.YE., YEGOROVA, L.G., NIRENBURG, V.L., POSTOVSKIY, I.YA.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(1), 21-4

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ISOMER, RAT, MERCURY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1901 STEP NO--UR/0450/70/004/001/0021/0024

CIRC ACCESSION NO--AT0114341

UNCLASSIFIED

2/2 008 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0114341

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO FORMS OF THE TITLE COMPD., DL-DMSA AND MESO-DMSA, WERE TESTED AS TO THEIR RELATIVE EFFICACY IN THE REDN. OF PRIME203 HGCL SUB2 WHICH HAD BEEN GIVEN TO RATS. THE ISOMER TESTED WAS ADMINISTERED IS LESS THAN OR EQUAL TO 15 MIN PRIOR TO THE INTRODUCTION OF THE HG COMPD., 3 DOSES OF THE RESP. ISOMER BEING GIVEN EACH DAY FOR A TOTAL OF 3 DAYS. THE HG WAS GIVEN S. C. AT LEVELS OF 35, 70, AND 242 MG-KG. AN EXPT. WAS ALSO DONE AT AN ORAL DOSAGE LEVEL OF 385 MG-KG. THE PERCENT OF THE HG COMPD. ELIMINATED WAS CHECKED AFTER 1 AND 3 DAYS. IN ALL CASES THE DL FORM WAS MUCH MORE EFFICIENT THAN THE MESO FORM. THE RESULTS ARE GIVEN IN TABULAR FORM. ON ALKALI TITRN. OF THE 2 FORMS, BOTH IN THE PRESENCE AND ABSENCE OF HGCL SUB2, IT WAS FOUND THAT THE 2 TITRN. CURVES WERE ALMOST IDENTICAL. HOWEVER, DIFFERENCES WERE NOTED IN THE CURVES WHEN THE ABSORBANCEWAS DETD. AT DIFFERENT PH LEVELS. FACILITY: SVERDLOVSK. INST. GIG. TR. PROFZABOL, SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--BENZODIAZINES. XII. QUINOXALONES CONTAINING METHYL GROUPS ON THE BENZENE RING -U-

AUTHOR-(02)-KOSHEL, N.G., POSTOVSKIY, I.YA.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (5), 684-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC AZINE COMPOUND, AROMATIC KETONE, EXOTHERMIC REACTION, IR SPECTRUM, HETEROCYCLIC NITROGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/0945 STEP NO--UR/0409/70/000/005/0684/0686

CIRC ACCESSION NO--AP0134667

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0134667
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MIXT. OF 2.07 G 4,5,DIAMINO,OXYLENE, 1.5 G CLCH SUB2 CO SUB2 H, AND 1.2 G SOLID NAOH WAS TRITURATED, TRANSFERRED TO A FLASK, AND SLIGHTLY HEATED TO START THE REACTION. THE EXOTERMIC REACTIO SUBSIDED IN 10 MIN. TO GIVE A SOLID MASS, WHICH WAS WORKED UP TO GIVE 1.6 G 6,7,DIMETHYLETETRAHYDRO,2,QUINOXALONE, M. 173-5DEGREES. THIS HEATED 1 HR WITH 10 ML 2N NAOH AND 1.5 ML 30PERCENT H SUB2 O SUB2, AND ACIDIFIED WITH 2N HCL TO PH 4 GAVE 1.3 G 6,7,DIEMTHYL,2(3H),QUINOXALONE (I) (R EQUALS R PRIME1 EQUALS ME, R PRIME2 EQUALS H), M. 291-2DEGREES (SUBLIMATION). SIMILARLY PREPD. WERE I (R EQUALS R PRIME1 EQUALS R PRIME2 EQUALS H) AND I (R EQUALS ME, R PRIME1 EQUALS R PRIME2 EQUALS H) FROM THE CORRESPONDING O,PHENYLENEDIAMINES. TO 13.3 G 3,4,DIAMINOTOLEUNE IN 20 ML HOT H SUB2 O WAS ADDED AT 85-90DEGREES A SOLN. OF 11.4 G ACETYLENEDICARBOXYLIC ACID (II) IN 50 ML H SUB2 O AND THE MIXT. REFLUXED 30 MIN TO GIVE 12.5 G I (R EQUALS R PRIME2 EQUALS ME, R PRIME1 EQUALS H), AND 0.6 G I (R EQUALS H, R PRIME1 EQUALS R PRIME2 EQUALS ME), M. 238-9DEGREES (SUBLIMATION). AN EQUIV. AMT. II IN 30 ML H SUB2 O ADDED TO 13.8 G 4,5,DIAMINO,O,XYLENE IN 400 ML HOT H SUB2 O AT 80-5DEGREES, AND THE MIXT. REFLUXED 30 MIN GAVE 15 G I (R EQUALS R PRIME1 EQUALS R PRIME2 EQUALS ME), M. 278-9DEGREES. SIMILARLY PREPD. WAS I (R EQUALS R PRIME1 EQUALS H, R PRIME2 EQUALS ME). THE EFFECT OF INTRODUCTION OF ME GROUPS IN I ON THE IR SPECTRA WAS DISCUSSED.
FACILITY: URAL. POLITEKH. INST. IM. KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--FORMAZANS CONTAINING AN S-TETRAZINE RING -U-

AUTHOR-(03)-POSTOVSKIY, I.YA., NOVIKOVA, A.P., YERSHOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6 (5), 1104-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CONDENSATION REACTION, ORGANIC AZINE COMPOUND, OPTIC PROPERTY, BENZENE DERIVATIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1352 STEP NO--UR/0366/70/006/005/1104/1107

CIRC ACCESSION NO--AP0135026

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135026

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDENSATION OF N SUB2 H SUB4 .H SUB2 O WITH 3,AMINO,6, METHYL,S,TETRAZINE GAVE THE 3,HYDRAZINO ANALOG (I), WHICH WAS HEATED WITH BZH TO GIVE THE N-BENZYLIDENE DERIV. (II). DIAZO COUPLING OF II WITH PHN SUB2 CL GAVE,1,(6,METHYL,S,TETRAZIN,3,YL),3,5, DIPHENYLFORMAZAN (III). A SIMILAR METHOD WAS USED IN THE SYNTHESIS OF 1,(6,PHENYL,S,TETRAZIN,3,YL),3,5,DIPHENYLFORMAZAN (IV). III AND IV HAVE CONSIDERABLY DEEPER COLORATION THAN P-MEC SUB6 H SUB4 NHN:CPHN:NPH OR P-PHC SUB6 H SUB4 NHN:CPHN:NPH. FACILITY: URAL. POLITEKH. INST. IM. KIROVA, SVERDLOVSK, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--BENZODIAZINES. XI. COVALENT HYDRATION IN A SERIES OF BENZOSUBSTITUTED DERIVATIVES OF TETRAZOLO(1,5-C)QUINAZOLINE -U-

AUTHOR--POSTOVSKIY, I.YA., GOLOMOLZIN, B.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (1), 100-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDRATION, BENZENE DERIVATIVE, HYDRAZINE ORGANIC DERIVATIVE, BROMINATED ORGANIC COMPOUND, ORGANIC AZOLE COMPOUND, POLYNUCLEAR HYDROCARBON, HETEROCYCLIC NITROGEN COMPOUND, HYDROXYL RADICAL, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/1695 STEP NO--UR/0409/70/000/001/0100/0102

CIRC ACCESSION NO--AP0104906
UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104906

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BOILING 0.01 MOLE 2,PHENYL,4,CHLORO,6,BROMOQUINAZOLINE (I) WITH 0.05 MOLE H SUB2 NNH SUB2 TIMES H SUB2 O IN 50 ML C SUB6 H SUB6 GAVE 90PERCENT 2,PHENYL,4,HYDRAZINO,6,BROMOQUINAZOLINE (II), M. 226-80EGREES (DECOMPN.) (ETOH). A MIXT. OF 0.01 MOLE I, 0.01 MOLE NAN SUB3, 100 ML ETOH, AND 2 ML H SUB2 O BOILED 1 HR GAVE 95PERCENT 5,PHENYL,9,BROMOTETRAZOLO(1;5-C)QUINAZOLINE (III), M. 160-61DEGREES (ISO-PROH). III WAS ALSO PREPD. BY TREATING 0.01 MOLE II IN 50 ML CONCD. H SUB2 SO SUB4 AND 50 ML H SUB2 O WITH AQ. 0.01 MOLE NANO SUB2 AT 80DEGREES. III (0.01 MOLE) WAS BOILED WITH 150 ML 1:1 HCL-H SUB2 O 3 HR, THE PPT. WAS FILTERED OFF, AND THE FILTRATE GAVE, AFTER TREATMENT WITH NH SUB3, 6PERCENT 2,PHENYL,6,BROMO,4,QUINAZOLONE (IV), M. 303-5DEGREES (ISO-PROH). THE PPT. DISSOLVED IN NH SUB3 AND PPTD. WITH HCL GAVE 75PERCENT 5,6,DIHYDRO,5,PHENYL,5,HYDROXY,9,BROMOTETRAZOLO(1,5-C),QUINAZOLINE (V), M. 251-52DEGREES (DECOMPN.) (ISO-PROH). V BOILED WITH 10PERCENT KOH 4 HR AND NEUTRALIZED WITH ACOH GAVE 50PERCENT 5,(2,AMINO,5,BROMOPHENYL)TETRAZOLE (VI), M. 205-6DEGREES (H SUB2 O), WHICH, TREATED WITH BZCL IN C SUB5 H SUB5 N GAVE V. VI BOILED WITH AC SUB2 O 20 MIN GAVE 70PERCENT 5,METHYL,5,HYDROXY,9,BROMO,5,6,DIHYDROTETRAZOLO(1,5-C)QUINAZOLINE (VII), M. 205-6DEGREES (AQ. ISO-PROH). III BOILED WITH 10PERCENT KOH 5 HR GAVE VI. MECHANISM OF THE COVALENT HYDRATION OF III IS DISCUSSED.

UNCLASSIFIED

1/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--ALKALINE SPLITTING OF 5,PHENYL,7(9),R,TETRAZOLO(1,5 C)QUINAZOLINES
-U-
AUTHOR--GOLOMOLZIN, B.V., POSTOVSKIY, I.YA.

P

COUNTRY OF INFO--USSR

SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (2), 281-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC AZOLE COMPOUND, BENZENE DERIVATIVE, HETEROCYCLIC NITROGEN COMPOUND, AMINE, CHLORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/1804 STEP NO--UR/0409/70/000/002/0281/0282

CIRC ACCESSION NO--AP0100378
UNCLASSIFIED

2/2 009 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0100378

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BOILING 0.0002 MOLE IN IN 10 ML 10PERCENT NAOH GAVE IN 50-60PERCENT YIELDS II (R PRIME1, R PRIME2, AND M.P. II) H, ME, 191-2DEGREES; CL, H, 197-9DEGREES; H, CL, 192-4DEGREES; H, OME, 162-3DEGREES.

UNCLASSIFIED

USSR UDC 615.272.2:547.821.4.03:616.24-003.662-092.9

KATSNEL'SON, B. A., BABUSHKINA, L. G., ARONOVA, G. V., STARIKOVA, S. K., POCHASHEV, Ye. N., SHNAYDMAN, I. Ya., POSTOVSKIY, S. N., BORODULINA, S. N., and MALYARENKO, I. S., Sverdlovsk Institute of Industrial Hygiene and Occupational Diseases, and Karaganda Institute of Industrial Hygiene and Occupational Diseases and Ural Polytechnic Institute, Sverdlovsk

"Experimental Study of the Protective Effect of Polyvinylpyridine-N-Oxide Against Silicosis"

Moscow, Gigiyena i Sanitariya, No 10, Oct 1970, pp 20-23

Abstract: A polyvinylpyridine-N-oxide polymer with a molecular weight of 117,500 was prepared, and its activity and effectiveness against silicosis were compared with those of a previously prepared polymer of molecular weight 40,000 and the P-204 polymer (Bayer, West Germany). It was found that the new polymer was more effective than either of the other two polymers against intratracheal dust (cristobalite) introduced in rats for a period of 3-1/2 months. Development of silicosis was sharply reduced, as indicated by the decrease in size and number of cellular-dust lumps and the reduction in proliferating reactions, and sclerotic shifts.

USSR

KATSNEL'SON, B. A., et al, Gigiyena i Sanitariya, No 10, Oct 1970, pp 20-23

Dust elimination from the lungs and inhibition of the silicotic fibrogenesis process are associated with an increase in the resistance of the alveolar coniophages to the cytopathic effect of silicon. It was found that this process was accompanied by a decrease in the diffusion of a lysosome hydrolytic enzyme (acid phosphatase) into the cytoplasm of macrophages due to the effect of silicon, a fact which is attributed to the anti-silicosis effect of the new polyvinylpyridine-N-oxide polymer.

USSR

UDC 619:616.981.31-093.33

POSTOYAN, S. B., MELIKYAN, V. G., and MARDZHANYAN, D. S., Armenian Scientific Research Institute of Animal Husbandry and Veterinary Sciences

"The Alveonasus lahorensis Neum 1908 Mite as a Possible Source of Vibrio Infection"

Yerevan, Biologicheskiy Zhurnal Armenii, Vol 23, No 8, Aug 70, pp 79-83

Abstract: The biological cycle of the Alveonasus lahorensis Naum mite has been found to coincide with the period in which abortions of vibrio etiology are widespread among sheep. Laboratory experiments were undertaken to determine the possibility of survival and periods of existence of Vibrio fetus in the mite organism, as well as the possibility of transmission of the Vibrio infection to animals through blood-sucking. Guinea pigs weighing 400 grams were infected subcutaneously and intraperitoneally with a Vibrio fetus culture of 2 million cells isolated from aborted sheep. Examinations of mites satiated with the blood of infected animals revealed the presence of Vibrio fetus in insect intestines. The intestinal content of the ticks was then removed by pressure, placed in physiological solution, and cultured in a test tube on meat-liver semiliquid agar. The tubes were taken then sealed with paraffin and kept at a temperature of 37°C. Vibrios were also cultured on 10-12 day old chick embryos. Growth of Vibrios on

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POSTOYAN, S. R., et al, Biologicheskiy Zhurnal Armenii, Vol 23, No 8, Aug 70, pp 79-83

both media was observed on the 2nd and 4th days after inoculation. Further examination of the intestinal content of the mites, conducted periodically for up to 136 days, established the presence of Vibrio fetus. No Vibrio were found in the larvae and eggs, however. It was also established that, notwithstanding the fact that Alveonasus lahorensis may be a carrier of Vibrio fetus for as long as 136 days, it did not transmit vibriosis to laboratory animals by blood-sucking and therefore cannot be regarded as the causative agent of the infection.